

Algorithms For Block-Level Code Alignment of Software Binary Files

ABSTRACT

5 A file differencing and updating system is provided that includes a file
differencing component and a file updating component. The file differencing component,
or file differencing engine, generates a difference file in a first processor-based or
computer system from an original or old version and a new version of an electronic file.
Generation of the difference files includes processing to reduce the number of file
10 changes introduced by code block swaps. The processing uses an alignment algorithm,
which includes a sorting algorithm, to align the code blocks of the original version in the
same order as those of the new version, thereby eliminating the increase in the number of
byte-level file differences due to code block swaps. During the alignment operations, the
block movements are dynamically recorded at a minimum cost level and encoded for
15 transmission to the file updating component for use in code recovery.